	Changed a file from non-ASCII to ASCII	Verified by: (STIC :
C	Changed the margins in cases where the sequence text was "wrap	pped" down to the next line.
E	Edited a format error in the Current Application Data section, speci	ifically:
E	Edited the Current Application Data section with the actual current applicant was the prior application data; or other	number inputted by the
4	Added the mandatory heading and subheadings for "Current Applic	cation Data".
=	Edited the "Number of Sequences" field. The applicant spelled out	a number instead of using an integer.
2	Changed the spelling of a mandatory field (the headings or subhea	dings), specifically:
2	Corrected the SEQ ID NO when obviously incorrect. The sequence	e numbers that were edited were:
Г	nserted or corrected a nucleic number at the end of a nucleic line.	SEQ ID NO's edited:
	corrected subheading placement. All responses must be on the sa pplicant placed a response below the subheading, this was moved	
ſ	nserted colons after headings/subheadings. Headings edited inclu-	uded:
С	Deleted extra, invalid, headings used by an applicant, specifically:	
	Deleted: non-ASCII "garbage" at the beginning/end of files; page numbers throughout text; other invalid text, such as	
l	nserted mandatory headings, specifically:	
(Corrected an obvious error in the response, specifically:	
Ε	Edited identifiers where upper case is used but lower case is requi	red, or vice versa.
C	Corrected an error in the Number of Sequences field, specifically:	
A	A "Hard Page Break" code was inserted by the applicant. All occur	rrences had to be deleted.
	eleted <i>ending</i> stop codon in amino acid sequences and adjusted le to a PatentIn bug). Sequences corrected:	
C	Other:	

^{*}Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

RAW SEQUENCE LISTING PATENT APPLICATION US/09/039,177

DATE: 11/04/98 TIME: 18:51:28

INPUT SET: S29620.raw

This Raw Listing contains the General
Information Section and up to the first 5 pages.

Corrected Diskette Needed

1		SEQUENCE LISTING
2		· -
3	(1)	General Information:
4		
5		(i) APPLICANT: Kohei MIYAZONO; Takeshe IMAMURA; Peter DEN
6 7		(ii) TITLE OF INVENTION: ISOLATED ALK-1 PROTEIN,
8		IT, AND USES THEREOF
9		II, AND ODED INDIANCE
> A 10		(iii) NUMBER OF SEQUENCES: 29
11		
. 12		(iv) CORRESPONDENCE ADDRESS:
13		(A) ADDRESSEE: Fulbright & Jaworski L.
14		(B) STREET: 805 Third Avenue
15		(C) CITY: New York City
16 17		(D) STATE: New York (E) COUNTRY: USA
18		(E) COUNTRY: OSA (F) ZIP: 10022
19		(1) 221
20		(v) COMPUTER READABLE FORM:
21		(A) MEDIUM TYPE: Diskette, 3.25 inch, 1.44mb
22		(B) COMPUTER: IBM PS/2
23		(C) OPERATING SYSTEM: PC-DOS
24		(D) SOFTWARE: Wordperfect
25		/ CURRENT ARRITON RAMA.
26 27		(vi) CURRENT APPLICATION DATA: (A) APPLICATION NUMBER: 09/039,177
28		(B) FILING DATE: March 13, 1998
> N ⁽² 29		(C) CLASSIFICATION: 435
30		(o, o
31		(vii) PRIOR APPLICATION DATA:
32		(A) APPLICATION NUMBER: PCT/GB93/0236
33		(B) FILING DATE: November 17, 1993
34		(
35 36		(Vii) PRIOR APPLICATION DATA: (A) APPLICATION NUMBER: GB 9224057.1
37		(A) APPLICATION NOMBER: GB 9224057.1 (B) FILING DATE: November 17, 1992
38		(b) Hilling Dail: November 17, 1992
39		(vii) PRIOR APPLICATION DATA:
40		(A) APPLICATION NUMBER: GB 9304677.9
41		(B) FILING DATE: March 8, 1993
42		
43		(vii) PRIOR APPLICATION DATA:
44		(A) APPLICATION NUMBER: GB 9304680.3
45		(B) FILING DATE: March 8, 1993
46		

RAW SEQUENCE LISTING PATENT APPLICATION US/09/039,177

DATE: 11/04/98 TIME: 18:51:29

INPUT SET: S29620.raw

		1141 U1 5E1. 527020.14W
	47	(vii) PRIOR APPLICATION DATA:
	48	(A) APPLICATION NUMBER: 9311047.6
	49	(B) FILING DATE: May 28, 1993
	50	
	51	(vii) PRIOR APPLICATION DATA:
	52	(A) APPLICATION NUMBER: 9313763.6
	53	(B) FILING DATE: July 2, 1993
	54	
	55	(Vii) PRIOR APPLICATION DATA:
	56	(A) APPLICATION NUMBER: 9136099.2
	57	(B) FILING DATE: August 3, 1993
	58	
	59	(vii) PRIOR APPLICATION DATA:
	60	(A) APPLICATION NUMBER: 321344.5
	61	(B) FILING DATE: October 15, 1993
	62	a de fartinde
	63	(viii) ATTORNEY/AGENT INFORMATION:
	64	(A) NAME: Norman D. Hanson
	65	(B) REGISTRATION NUMBER: 30,946
	66	(C) REFERENCE/DOCKET NUMBER: LUD 5539 - JEL/NDH
	67	/and re
	68	(A) APPLICATION NUMBER: 321344.5 (B) FILING DATE: October 15, 1993 (viii) ATTORNEY/AGENT INFORMATION: (A) NAME: Norman D. Hanson (B) REGISTRATION NUMBER: 30,946 (C) REFERENCE/DOCKET NUMBER: LUD 5539 - JEL/NDH (ix) TELECOMMUNICATION INFORMATION: (A) TELEPHONE: (212) 688-9200
	69	(A) TELEPHONE: (212) 688-9200 (
	70	(B) TELEFAX: (212) 838-3884(2) INFORMATION FOR
>	71	(i) SEQUENCE CHARACTERISTICS:
>	72	(A) LENGTH: 1984 base pairs
>	73	(B) TYPE: nucleic acid
>	74	(C) STRANDEDNESS: unknown
>	75	(D) TOPOLOGY: linear
	76	
>	77	(ii) MOLECULE TYPE: cDNA
>	78	(iii) HYPOTHETICAL: NO
>	79	(iii) ANTI-SENSE: NO
>	80	(v) FRAGMENT TYPE: internal
>	81	(vi) ORIGINAL SOURCE:
>	82	(A) ORGANISM: Homo sapiens
>	83	(ix) FEATURE:
>	84	(A) NAME/KEY: CDS
>	8 5	(B) LOCATION: 2831791
>	86 87	(vi) CENTENCE DECORTORION. CEN ID NO. 1.
/	88	(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
	89	AGGAAACGGT TTATTAGGAG GGAGTGGTGG AGCTGGGCCA GGCAGGAAGA CGCTGGAATA 60
	90	ACCIDENCE INTITACES CONCIDENCE COCKCONICE COCTOCNIE
	91	AGAAACATTT TTGCTCCAGC CCCCATCCCA GTCCCGGGAG GCTGCCGCGC CAGCTGCGCC 120
	92	ADMINISTITUTE OF THE PROPERTY
	93	GAGCGAGCCC CTCCCCGGCT CCAGCCCGGT CCGGGGCCGC GCCGGACCCC AGCCCGCCGT 180
	94	
	95	CCAGCGCTGG CGGTGCAACT GCGGCCGCGC GGTGGAGGGG AGGTGGCCCC GGTCCGCCGA 240
	96	
	97	AGGCTAGCGC CCCGCCACCC GCAGAGCGGG CCCAGAGGGA CC ATG ACC TTG GGC 294
	98	Met Thr Leu Gly
	99	1

RAW SEQUENCE LISTING PATENT APPLICATION US/09/039,177

DATE: 11/04/98 TIME: 18:51:31

INPUT SET: S29620.raw

														II	VPUT	SET: S	52902U.	.raw
100	maa	000	100		999	amm	ama	3 000	ama	ama	3.00	aaa	mma	ama	3.00	a sa	2	40
101						CTT											3	42
102		PIO	Arg	гàг	GIY	Leu	Leu	мес	Leu	Leu		АТа	Leu	val	Thr			
103	5					10					15					20		
104	aa ,	ava	аат	ama	* * * *	000	mam	aaa	000	aaa	ama.	ama	3.00	maa	8.00	mam	2	00
105 106						CCG											3	90
105	GTA	ASP	Pro	νат	LуS 25	Pro	ser	Arg	сту		Leu	vaı	THE	cys	35	Cys		
					25					30					33			
108 109	ana	200	aas	αлп	шаа	AAG	aaa	aam	3.00	maa.	aaa	aaa	aaa	maa	maa	202	4	38
110						Lys											4	30
111	GIU	261	FIU	40	Cys	пÃэ	Gry	FIO	45	Cys	Arg	СТУ	ΑΙα	50	Cys	1111		
112				40					43					30				
113	OTT A	OTIC!	CTC	OTO C	aaa	GAG	CAC	CCC	אממ	a s a	aaa	a a a	C 3 3	СУП	aaa	CCC	4	86
114						Glu											-	00
115	Val	Val	55	AGT	MIG	GIU	GIU	60	AIG	urs	PIO	GIII	65	urs	Arg	GIY		
116			33					00					0.5					
117	TGC	aaa	ልልሮ	ጥጥር፤	CAC	AGG	GAG	כיויר	TGC	AGG	aaa	ccc	מממ	ACC	GAG	ጥጥሮ	5	34
118						Arg											,	J-1
119	Cys	70	ASII	рец	1113	A. y	75	пеа	Cys	Arg	OT y	80	110	1111	OLU	1110		
120		, 0					, ,					00						
121	GTC	AAC	CAC	TAC	TGC	TGC	GAC	AGC	CAC	CTC	TGC	AAC	CAC	AAC	GTG	TCC	5	82
122						Cys											•	
123	85			-1-	-1-	90					95					100		
124						- •												
125	CTG	GTG	CTG	GAG	GCC	ACC	CAA	CCT	CCT	TCG	GAG	CAG	CCG	GGA	ACA	GAT	6	30
126	Leu	Val	Leu	Glu	Ala	Thr	Gln	Pro	Pro	Ser	Glu	Gln	Pro	Gly	Thr	Asp		
127					105					110				•	115	-		
128																		
129	GGC	CAG	CTG	GCC	CTG	ATC	CTG	GGC	CCC	GTG	CTG	GCC	TTG	CTG	GCC	CTG	6	78
130	Gly	Gln	Leu	Ala	Leu	Ile	Leu	Gly	Pro	Val	Leu	Ala	Leu	Leu	Ala	Leu		
131		•		120					125					130				
132					•													
133	GTG	GCC	CTG	GGT	GTC	CTG	GGC	CTG	TGG	CAT	GTC	CGA	CGG	AGG	CAG	GAG	7	26
134	Val	Ala	Leu	Gly	Val	Leu	Gly	Leu	Trp	His	Val	Arg	Arg	Arg	Gln	Glu		
135			135					140					145					
136																		
137						CAC											7	74
138	Lys		Arg	Gly	Leu	His		Glu	Leu	Gly	Glu		Ser	Leu	Ile	Leu		
139		150					155					160						
140																		
141						GGC											8	22
142	_	АТа	Ser	GIU	GIn	Gly	Asp	Thr	мет	Leu	_	Asp	Leu	Leu	Asp			
143	165					170					175					180		
144	~~~	m~~			~~~		~~~	m~ •	~~~	am	~~~	mm~	am	ama	a	100	^	7.0
145						AGT											8	70
146	ASP	cys	TIII	mr	_	Ser	стλ	ser	стλ		Pro	rne	Leu	val		Arg		
147					185					190					195			
148	202	Oma.	aa x	000	a sa	amm.	aaa	mma	ama	a sa	mam	ата	CC 3	**	aaa	aaa		18
149 150						GTT Val											9	10
150	TIIT	val	мта	200	GTII	۷ат	HIG	reu	205	GIU	Cys	val	Q T Y	210	сту	ALG		
151				200					203					210				
102																		

RAW SEQUENCE LISTING PATENT APPLICATION US/09/039,177

DATE: 11/04/98 TIME: 18:51:33

														I!	PUT	SET: S	529620.raw
153	TAT	GGC	GAA	GTG	TGG	CGG	GGC	TTG	TGG	CAC	GGT	GAG	AGT				966
154						Arg											
155	-1-		215			5	1	220			3		225				
156																	
157	AAG	ልሞሮ	ጥጥር	TCC	TCG	AGG	CAT	GAA	CAG	TCC	TGG	ጥጥር	CGG	GAG	እርጥ	GAG	1014
158						Arg											1014
159	цуз	230	1 110	Ser	261	Arg	235	GIU	GIII	Ser	пр	240	Arg	GIU	1111	GIU	
160		230					233					240					
161	а пт	mam	220	202	CIM 8	mma	ama	202		aza	330	a ma	CITE A	aaa	mma	a ma	1060
162						TTG											1062
163		ıyı	ASII	1111	Vат	Leu	Leu	Arg	птэ	ASP		TTG	Leu	GTÅ	Fne		
164	245					250					255					260	
165	aaa	ma x	a a a	» ma	3.00	TCC	000	224	шаа	3.00	3 CC	a a a	ama	maa	ama	» ma	1110
																	1110
166	Ата	ser	ASP	Met		Ser	Arg	ASII	Ser		THE	GIII	Leu	тър		TIE	
167					265					270					275		
168	3.00	a 2 a	ma.ca	asa	0.0	a sa	000	maa	ama	mag	a.a	mmm	ama	a 2 a		ara	1150
169						CAC											1158
170	Thr	HIS	Tyr		GIU	His	стА	Ser		Tyr	Asp	Pne	Leu		Arg	GIN	
171				280					285					290			
172		ama	a. a	~~~	G 3 m	ama	a a m	ama		am.	aam	ama	maa		aa .	maa	1006
173						CTG											1206
174	Thr	Leu		Pro	HIS	Leu	Ата		arg	Leu	АТа	vaı		Ата	АТа	cys	
175			295					300					305				
176		ama	~~~	~~~	ama	~ 3.~	ama	~~~		mma	a a m		a. a			~~	1054
177						CAC											1254
178	GTÅ		Ата	HIS	Leu	His		GIU	тте	Pne	GTA		GIN	СТА	гÀг	PIO	
179		310					315					320					
180	aaa	a mm	000	a 2 a	000	a.a	mma	330	3.00	000	3 3 M	ama	ama	ama		100	1202
181						GAC											1302
182		тте	Ата	HIS	Arg	Asp	Pne	гÀг	Ser	Arg		val	Leu	vaı	гàг		
183	325					330					335					340	
184	220	ama	ana	mam	maa	» ma	aaa	ana	ama	aaa	ama	aam	ama	» ma	ava	шах	1250
185						ATC											1350
186	ASI	ьеп	GIN	cys		Ile	Ата	Asp	Leu	_	Leu	Ата	vaı	мет		Ser	
187 188					345					350					355		
189	CAC	aaa	3.00	CI A III	mad	CTG	ava	» ma	aaa	220	220	000	202	ama.	000	» aa	1398
190						Leu											1390
191	GIII	СТА	Ser	360	ıyı	Leu	ASP	TTE	_	ASII	ASII	PIO	Arg		сту	1111	
192				300					365					370			
193	A A C	aaa	ma.c	a ma	CCA	ccc	ava	ama	CITIC	CAC	CAC	CAC	»ma	aaa	3.00	CAC	1446
193						Pro											1446
195	гуз	Arg	375	Met	АТА	PIO	GIU	380	Leu	ASP	GIU	GIII	385	Arg	1111	ASP	
196			3/3					300					363				
196	maa	mmm	aza	maa	mag	AAG	maa	N CITT	CAC	N M/C	maa	aaa	mmm	aaa	ama	ama	1404
197						Lys											1494
198	cys		GIU	Det.	TAL	губ	_	1111	ASD	тте	ıτħ		rne	стА	ьeu	val	
200		390					395					400					
200	ama	maa	a a a	λmm	aaa	aaa	000	3.00	y ma	ama	2 2 (1)	aaa	a ma	ama	as a	ana	1540
201						CGC											1542
202		ттЪ	GIU	тте	ATG	Arg	Arg	TIII	тте	ναт		GTÅ	тте	vdT	GIU	_	
203	405					410					415					420	
	mлm	202	CCR	aaa	mma	יות א וווי	CI A ITT	ama	ama	000	יחגג	C A C	aaa	N.C.C	mmm	CAC	1500
205	IAT	AGA	CCA		TIC	TAT	GAT	GIG	GIG		AAT	GAC	CCC	AGC	1 1 1	GAG	1590

RAW SEQUENCE LISTING PATENT APPLICATION US/09/039,177

DATE: 11/04/98 TIME: 18:51:35

														7.8	den re	CDT. COL	1620 mm.u
206	M	1	Dwa	Dwa	Dha	m	N am	v. l	v. 1	Dro	2	3.00	Dro		Phe	SET: S29	020.ruw
206 207	Tyr	Arg	PIO	Pro	425	Tyr	ASP	vаı	Val	430	ASII	Asp	PIO	Ser	435	GIU	
207					425					430					433		
208	CAC	N TO CO	220	220	OTE C	СШС	mam	ama	αлп	ava	ava	N.C.C	aaa	אממ	አመረ	CCT	1638
210															Ile		1030
	ASP	Met	гуз	-	val	Val	cys	vaı	445	GIII	GIII	1111	PIO	450	TTE	PIO	
211				440					445					450			
212		~~~	аша	aam	aa .	a.a	~~~	ama	ama	ma s	aaa	CITE 3	aam	~~~	3 000	3 m/d	1606
213																ATG	1686
214	Asn	Arg		Ата	АТА	Asp	Pro		Leu	ser	GTĀ	Leu		GIN	Met	мет	
215			455					460					465				
216										~~~	~~~			~~~	ama		1504
217																CGG	1734
218	Arg		Cys	Trp	Tyr	Pro		Pro	Ser	АТа	Arg		Thr	А1а	Leu	Arg	
219		470					475					480					
220																	
221															CCT		1782
222		Lys	Lys	Thr	Leu		Lys	Ile	Ser	Asn		Pro	Glu	Lys	Pro	_	
223	485					490					495					500	
224										•							
225	GTG	ATT	CAA	TAG	CCCA	GA (CAC	CTGA!	rt co	CTTTC	CTGC	C TG	CAGG	GGC			1831
226	Val	Ile	Gln														
227																	
228	TGG	GGGG	GTG (GGGG	GCAG"	rg g <i>i</i>	ATGGT	rgcco	TA:	rctg(GTA	GAG	3TAG	rgt (GAGT	STGGTG	1891
229																	
230	TGT	CTG	GGG A	ATGG	GCAG	CT GC	CGCCT	rgcc:	r gc:	rcgg	CCCC	CAG	CCA	CCC I	AGCC	TAAAA	1951
231																	
232	ACAC	CTG	GC 1	rgaa <i>i</i>	ACCTO	SA A	AAAA	AAAA	A AA	A							1984
233																	
234	(2)	INF	DRMA'	rion	FOR	SEQ	ID 1	NO: 2	2:								
235		(i)	SEQU	JENC	E CHA	ARACT	CERIS	STICS	3:								
236			(A)	LENG	GTH:	503	amir	no ac	cids								
237			(B)	TYPI	E: an	nino	acid	3				*					
238			(D)	TOP	DLOG	?: li	inear	:									
239		(ii)) MOI	LECUI	LE TY	PE:	prot	tein									
240							_										
241		(xi)) SE(QUENC	CE DE	ESCRI	PTIC	ON: S	SEQ I	ED NO	0: 2:	:					
242		` '		_					-								
243	Met	Thr	Leu	Gly	Ser	Pro	Arq	Lys	Gly	Leu	Leu	Met	Leu	Leu	Met	Ala	
244	1			2	5		J			10					15		
245																	
246	Leu	Val	Thr	Gln	Glv	Asp	Pro	Val	Lvs	Pro	Ser	Ara	Glv	Pro	Leu	Val	
247				20	1	E			25			5	1	30			
248																	
249	Thr	Cvs	Thr	Cvs	Glu	Ser	Pro	His	Cvs	I.vs	Glv	Pro	Thr	Cvs	Arg	Glv	
250		010	35	~ <i>1</i> 5		~~1		40	J, 5	-,5	~-3		45	-,5	9	1	
251			55					- 1 U					± J				
251	Δls	Ψrn	Ctre	ጥኮኮ	Va 1	۲a۱	T. 611	۲a٦	Δra	Glu	Glu	Gl v	Δra	Hie	Pro	Gln	
252	та	_	Cys	TIIT	val	Val	55	۷ат	719	GIU	GIU	60	719	1113	110	J111	
		50					JJ					00					
254	a 1	TT -	A	α1	0	a1	A	T	111 -	λ	a1	Т	a	λ	a1	A = ~	
255		uis	arg	σтλ	cys		ASN	ьeu	uis	arg		ьeu	cys	arg	Gly		
256	65					70					75					80	
257	ъ.	ml.	a 3	D1			***	m- ·	a	a	3	a	777 -	T	a		
258	rro	rnr	GIU	Fue	vaı	ASN	HIS	туr	cys	cys	Asp	ser	HIS	ьeu	Суs	ASN	

SEQUENCE VERIFICATION REPORT PATENT APPLICATION US/09/039,177

DATE: 11/04/98 TIME: 18:51:38

INPUT SET: S29620.raw

Line	Error	Original Text
10	Number of Sequences (29) Doesn't Equal Actual Count (28)	(iii) NUMBER OF SEQUENCES: 29
29	Wrong Classification	(C) CLASSIFICATION: 435
71	Unknown or Misplaced Identifier	(i) SEQUENCE CHARACTERISTICS:
72	Unknown or Misplaced Identifier	(A) LENGTH: 1984 base pairs
73	Unknown or Misplaced Identifier	(B) TYPE: nucleic acid
74	Unknown or Misplaced Identifier	(C) STRANDEDNESS: unknown
75	Unknown or Misplaced Identifier	(D) TOPOLOGY: linear
77	Unknown or Misplaced Identifier	(ii) MOLECULE TYPE: cDNA
78	Unknown or Misplaced Identifier	(iii) HYPOTHETICAL: NO
79	Unknown or Misplaced Identifier	(iii) ANTI-SENSE: NO
80	Unknown or Misplaced Identifier	(v) FRAGMENT TYPE: internal
81	Unknown or Misplaced Identifier	(vi) ORIGINAL SOURCE:
82	Unknown or Misplaced Identifier	(A) ORGANISM: Homo sapiens
83	Unknown or Misplaced Identifier	(ix) FEATURE:
84	Unknown or Misplaced Identifier	(A) NAME/KEY: CDS
85	Unknown or Misplaced Identifier	(B) LOCATION: 2831791
87	Unknown or Misplaced Identifier	(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1: